

Serial No. 10/601,063

Page 2

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

We Claim:

1. (currently amended) A method of controlling traction in a vehicle having at least one non-driven wheel speed sensor, the method comprising:

detecting at least one of actual vehicle acceleration and a wheel speed difference;

comparing said at least one of said actual vehicle acceleration and said wheel speed difference to at least one of a predetermined vehicle acceleration and a predetermined wheel speed difference to detect vehicle wheel slip; and

reducing wheel torque in response to said detected wheel slip based upon vehicle acceleration using a least squares approximation or a wheel speed difference .

2. (original) The method of claim 1 wherein said comparing step further includes:

detecting a wheel speed acceleration; and

comparing said wheel speed acceleration to a predetermined wheel speed acceleration to detect wheel slip.

3. (original) The method of claim 1 further comprising:

comparing a non-driven wheel speed to a threshold non-driven wheel speed value and a trans throttle value to a threshold throttle value to obtain a comparison result; and

selecting a wheel slip detection method based on said comparison result.

4. (original) The method of claim 1 wherein said step of reducing wheel torque comprises accessing a table of torque reduction values based on input pulley speed and at least one of an acceleration error and a wheel speed difference.

Serial No. 10/601,063

Page 3

5. (original) The method of claim 1 further comprising:
specifying a transmission speed ratio based on a current vehicle speed; and
providing a line pressure in the transmission based on the specified speed ratio.

6. (original) The method of claim 1 further comprising:
determining a first torque reduction amount based on at least one of acceleration error
and input pulley speed;
determining a second torque reduction amount based on at least one of input pulley
speed and speed difference between driven and non-driven wheels; and
reducing wheel torque using a lesser of the reduction amounts.

7. (original) A method of controlling traction in a vehicle having at least one non-
driven wheel speed sensor, the method comprising:
detecting a non-driven wheel speed and a trans throttle position;
comparing said non-driven wheel speed and said trans throttle position to a
predetermined non-driven wheel speed and a predetermined trans throttle position; and
selecting one of a plurality of wheel slip detection methods based on said comparing
step.

8. (original) The method of claim 7 further comprising performing said plurality of
wheel slip detection methods.

9. (original) The method of claim 7 wherein a first wheel slip detection method
detects a speed difference of driven and non-driven wheels and compares said speed difference
of driven and non-driven wheels to a predetermined difference, and wherein a second wheel slip
detection method detects vehicle acceleration and compares said vehicle acceleration to a
predetermined vehicle acceleration.

Serial No. 10/601,063

Page 4

10. (original) The method of claim 9 wherein comparing said speed difference further includes:

detecting a driven wheel speed acceleration; and

comparing said driven wheel speed acceleration to a predetermined driven wheel speed acceleration.

11. (original) The method of claim 7, further comprising applying a torque reduction to a wheel based on said selected wheel slip detection method.

12. (original) The method of claim 7 further comprising reducing a wheel torque based on a result of the selected wheel slip detection method.

13. (original) The method of claim 12 wherein reducing a wheel torque comprises using an input pulley speed and a speed difference between driven and non-driven wheels to define a torque reduction.

14. (original) The method of claim 12 wherein reducing a wheel torque comprises using an acceleration error and an input pulley speed to define a torque reduction.

15. (currently amended) A vehicle having at least one non-driven wheel speed sensor and comprising a processor configured to control traction, the processor configured to:

detect at least one of vehicle acceleration and a wheel speed difference;

compare at least one of said vehicle acceleration and said wheel speed difference to at least one of a predetermined vehicle acceleration and a predetermined wheel speed difference to detect vehicle wheel slip; [and]

reduce wheel torque in response to said detected wheel slip based upon said vehicle acceleration or said wheel speed difference;

wherein said processor compares said wheel speed difference to a calibration value to determine a first condition;

Serial No. 10/601,063

Page 5

wherein said process compares said vehicle acceleration to a calibration value to determine a second condition; and

wherein said processor arbitrates between said first and second condition to control torque to at least one wheel in the vehicle .

16. (original) The vehicle of claim 15 wherein the processor is further configured to:
detect a wheel speed acceleration; and
compare said wheel speed acceleration to a predetermined wheel speed acceleration to detect wheel slip.

17. (original) The vehicle of claim 15 wherein the processor is further configured to:
compare a non-driven wheel speed to a threshold non-driven wheel speed value and a trans throttle value to a threshold throttle value to obtain a comparison result; and
select a wheel slip detection method based on said comparison result.

18. (original) The vehicle of claim 15 wherein the processor is further configured to
access a table of torque reduction values based on input pulley speed and one of an acceleration error and a wheel speed difference.

19. (original) The vehicle of claim 15 wherein the processor is further configured to:
specify a transmission speed ratio based on a current vehicle speed; and
specify a line pressure in the transmission based on the specified speed ratio.

20. (original) The vehicle of claim 15 wherein the processor is further configured to:
determine a first torque reduction amount based on at least one of acceleration error and input pulley speed;
determine a second torque reduction amount based on at least one of input pulley speed and speed difference between driven and non-driven wheels; and
reduce wheel torque using a lesser of the reduction amounts.

Serial No. 10/601,063

Page 6

21. (currently amended) A method of controlling traction in a vehicle having at least one non-driven wheel speed sensor, the method comprising:

detecting at least one of actual vehicle acceleration and a wheel speed difference;

generating a first torque request to a vehicle controller based on an acceleration based slip determined using a least squares approximation;

generating a second torque request to a vehicle controller based on a wheel speed difference slip;

varying wheel torque using the lowest value of either said first torque request or said second torque request.

22. (new) The method of Claim 21 wherein varying the wheel torque comprises reducing the wheel torque.